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CHAPTER 3

SURFACE WATER SUPPLIES

3-1. Surface water sources. Surface water supply sources include streams, lakes, and impounding reservoirs. Large supplies of surface water are generally available throughout much of the eastern half of the United States where rainfall averages about 35 inches or more annually and is reasonably well distributed through the year. On the other hand, good surface water sources are much more limited in many western regions with the exception of the Pacific Northwest, where surface water is plentiful.

3-2. Water laws. An investigation directed toward development of new or additional sources of supply should be made with consideration of applicable state water laws.

3-3. Watershed control and surveillance. Raw water supplies should be of the best practicable quality even though extensive treatment, including filtration, is provided. Strict watershed control is usually impractical in the case of water supplies obtained from streams. However, some measure of control can be exercised over adverse influences, such as wastewater discharges, in the vicinity of the water supply intake. For supplies derived from impounding reservoirs, it is generally feasible to establish and maintain a control and surveillance program whose objective is protection of the quality of raw water obtained from the reservoir. At reservoirs whose sole purpose is to provide a source of water supply, recreational use of the reservoir and shoreline areas should be rigorously controlled to protect the water supply quality.

3-4. Checklist for surface water investigations. The investigations will cover the following items, as well as others, as circumstances warrant.

- a. Topographic maps showing pertinent drainage areas.
- b. Hydrologic data, as required for project evaluations, e.g., rainfall, runoff, evaporation, assessment of ground water resources and their potential as the sole source or supplementary source of supply.
- c. Sanitary survey findings.
- d. Intake location.
- e. Water quality data at or near proposed intake site.
- f. Feasibility of developing supply without reservoir construction.

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- g. Reservoir location if reservoir is required.
- h. Plans for other reservoirs on watershed.
- i. Pertinent geological data that may affect dam foundation or ability of reservoir to hold water.
- j. Locations for pump stations, supply lines, treatment plant.
- k. Energy requirements for proposed system.
- l. State water laws, rules and regulations, procedure for obtaining right to use water, impact of proposed use on rights of other users.
- m. Disposition of sludge from water treatment plant.